CLAIMS

I claim:

1. A fuzzy audio wireless music system for wireless transmission of a signal from an audio source to a battery powered headphone receiver comprising:

a headphone jack from an audio source in communication with a connectable battery powered transmitter;

said connectable battery powered transmitter contains an A/D converter wherein said A/D converter converts an analog music audio signal to a digital signal at a signal rate of approximately 1.4 Mbps;

said A/D converter in communication with a shift register generator, a convolutional encoder and an interleaver;

said interleaver in communication with a spread spectrum modulator;

said spread spectrum modulator in communication with a transmit antenna for wireless transmission of a coded digital signal to a receiving antenna at a radio frequency of approximately 2.4 GHz;

said receiving antenna in communication with a spread spectrum demodulator, a convolutional deinterleaver and a decoder; and

said decoder in communication with a fuzzy logic detector.

2. The fuzzy audio wireless music system as in claim 1 wherein said battery powered headphone receiver having said fuzzy logic detector with a detection method, comprising the steps of:

a) receiving a user code having:

x(i) where i = 1, 2, ..., n is the set of all bits that make up the user code vector;

X(c), where c = 1, 2, ..., m represents each user assigned

unique user code;

Wherein user X(1) has bit code [x(1) x (2).... X(n)] and user X(m) has bit code [x(1) x(2) ... x(n)] which is different form X(1);

b) activating a fuzzy if rule based on each x in X wherein the if part sets are conditional densities to activate the if rule to the degree p[x(i)|X(c)] p[X(c)];

c) activating a fuzzy then rule indirectly dependent on each x in X wherein the then part sets are a weighted sum equal to p[x(i)]p[y|x(i)], i = 1,2, ..., n; and

d) performing a defuzzifying operation of modal type.

3. A battery powered headphone receiver having a fuzzy logic detector method, comprising the steps of:

a) receiving a user code having:

x(i) where i = 1, 2, ..., n is the set of all bits that make up the user code vector;

X(c), where c = 1, 2, ..., m represents each user assigned unique user code;

wherein user X(1) has bit code [x(1) x (2).... X(n)] and user X(m) has bit code [x(1) x(2) ... x(n)] which is different form X(1);

b) activating a fuzzy if rule based on each x in X wherein the if part sets are conditional densities to activate the if rule to the degree p[x(i)|X(c)] p[X(c)];

c) activating a fuzzy then rule indirectly dependent on each x in X wherein the then part sets are a weighted sum equal to p[x(i)]p[y|x(i)], i = 1,2, ..., n; and

d) performing a defuzzifying operation of modal type.

4. A method for battery powered digital wireless transmission and reception of high fidelity audio music between a battery operated transmitter

and a battery operated receiver comprising the step of:

connecting a headphone plug attached to said battery operated transmitter to a headphone jack of an audio source;

converting an music audio signal to a digital signal using an A/D converter having a sampling rate of approximately 44.1 kHz multiplied by 16 bit quantization to produce a signal rate of approximately 1.4 Mbps;

encoding the digital signal using a convolutional encoding and interleaving method;

creating a spread spectrum signal using a shift register generator to modulate a unique user code;

transmitting said spread spectrum signal at a radio frequency of approximately 2.4 GHz at a power level that adheres to the ISM standard for reception at a distance of up to approximately 10 feet from said battery operated transmitter;

receiving said spread spectrum signal at said battery operated receiver headphones;

demodulating said spread spectrum signal and optimal bit detecting of said unique user code using fuzzy logic technology;

convolutional decoding and deinterleaving to receive said digital signal;

converting said digital signal to said analog music audio signal; and

communication said analog music audio signal to a headphone speaker.

5. The battery powered receiver headphone as in claim 4 wherein said receiver having a fuzzy logic detector method comprising the steps of:

a) receiving a user code having:

x(i) where I = 1, 2, ..., n is the set of all bits that make up the user code vector;

X(c), where c = 1, 2, ..., m represents each user assigned unique user code;

Wherein user X(1) has bit code [x(1) x (2).... X(n)] and user X(m) has bit code [x(1) x(2) ... x(n)] which is different form X(i);

b) activating a fuzzy if rule based on each x in X wherein the if part sets are conditional densities to activate the if rule to the degree p[x(i)|X(c)] p[X(c)];

c) activating a fuzzy then rule indirectly dependent on each x in X wherein the then part sets are a weighted sum equal to p[x(i)]p[y|x(i)], i = 1,2, ..., n; and

d) performing a defuzzifying operation of modal type.